

FORM PTO-1390  
REV. 5-93US DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICEATTORNEYS DOCKET NUMBER  
**P00,0069****TRANSMITTAL LETTER TO THE UNITED STATES  
DESIGNATED/ELECTED OFFICE (DO/EO/US)  
CONCERNING A FILING UNDER 35 U.S.C. 371**

U.S. APPLICATION NO. (if known, see 37 CFR 1.5)

**09/509055**INTERNATIONAL APPLICATION NO.  
**PCT/DE98/02624**INTERNATIONAL FILING DATE  
**07 September 1998**PRIORITY DATE CLAIMED  
**19 September 1997**

## TITLE OF INVENTION

**METHOD AND SYSTEM FOR AUTOMATICALLY TRANSLATING MESSAGES IN A COMMUNICATION SYSTEM**

APPLICANT(S) FOR DO/EO/US

**Hans Dieter Hecker**

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay.
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of International Application as filed (35 U.S.C. 371(c)(2))
  - a. ☒ is transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☐ has been transmitted by the International Bureau.
  - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US)
6. ☒ A translation of the International Application into English (35 U.S.C. 371(c)(2))
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. §371(c)(3))
  - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☐ have been transmitted by the International Bureau.
  - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
  - d. ☒ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)). **Executed declaration**
10. ☒ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

## Items 11. to 16. below concern other document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 C.F.R. 1.97 and 1.98; (PTO 1449, Prior Art, Search Report)
12. ☒ An assignment document for recording. A separate cover sheet in compliance with 37 C.F.R. 3.28 and 3.31 is included.  
(See Attached Envelope)
13. ☒ A FIRST preliminary amendment.  
☐ A SECOND or SUBSEQUENT preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information:
  - a. ☒ Submission of Drawings - FIGS. 1-2 on two sheets
  - b. ☒ Express Mail EL470808807US dated 3-20-2000

U.S. APPLICATION NO. 09/509055

INTERNATIONAL APPLICATION NO.  
PCT/DE98/02624ATTORNEY'S DOCKET NUMBER  
P00,006917. ☒ The following fees are submitted:**BASIC NATIONAL FEE (37 C.F.R. 1.492(a)(1)-(5):**

Search Report has been prepared by the EPO or JPO ..... \$840.00

International preliminary examination fee paid to USPTO (37 C.F.R. 1.482) .. \$720.00

No international preliminary examination fee paid to USPTO (37 C.F.R. 1.482) but  
international search fee paid to USPTO (37 C.F.R. 1.445(a)(2)) ..... \$790.00Neither international preliminary examination fee (37 C.F.R. 1.482) nor international  
search fee (37 C.F.R. 1.445(a)(2)) paid to USPTO ..... \$1070.00International preliminary examination fee paid to USPTO (37 C.F.R. 1.482) and all  
claims satisfied provisions of PCT Article 33(2)-(4) ..... \$ 98.00**ENTER APPROPRIATE BASIC FEE AMOUNT =**

CALCULATIONS

PTO USE ONLY

\$ 840.00

Surcharge of \$130.00 for furnishing the oath or declaration later than ☐ 20 ☐ 30 months  
from the earliest claimed priority date (37 C.F.R. 1.492(e)).

\$

Claims

Number Filed

Number  
Extra

Rate

Total Claims

10

- 20 =

0

X \$ 18.00

\$

Independent Claims

2

- 3 =

X \$ 78.00

\$

Multiple Dependent Claims

\$260.00 +

\$

**TOTAL OF ABOVE CALCULATIONS =**

\$

Reduction by 1/2 for filing by small entity, if applicable. Verified Small Entity statement must also  
be filed. (Note 37 C.F.R. 1.9, 1.27, 1.28)

\$

**SUBTOTAL =**

\$

Processing fee of \$130.00 for furnishing the English translation later than ☐ 20 ☐ 30 months  
from the earliest claimed priority date (37 CFR 1.492(f)).

\$

+

**TOTAL NATIONAL FEE =**

\$ 840.00

Fee for recording the enclosed assignment (37 C.F.R. 1.21(h)). The assignment must be  
accompanied by an appropriate cover sheet (37 C.F.R. 3.28, 3.31). \$40.00 per property

+

**TOTAL FEES ENCLOSED =**

\$ 840.00

Amount to be  
refunded

\$

charged

\$

a. ☒ A check in the amount of \$ 840.00 to cover the above fees is enclosed.b. ☐ Please charge my Deposit Account No. \_\_\_\_\_ in the amount of \$ \_\_\_\_\_ to cover the above fees.  
A duplicate copy of this sheet is enclosed.c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any  
overpayment to Deposit Account No. 08-2290. A duplicate copy of this sheet is enclosed.NOTE: Where an appropriate time limit under 37 C.F.R. 1.494 or 1.495 has not been met, a petition to revive (37 C.F.R. 1.137(a) or (b)) must be  
filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

Hill & Simpson  
A Professional Corporation  
85th Floor Sears Tower  
Chicago, Illinois 60606

SIGNATURE

William E. Vaughan  
NAME39,056  
Registration Number

BOX PCT

IN THE UNITED STATES DESIGNATED/ELECTED OFFICE  
OF THE UNITED STATES PATENT AND TRADEMARK OFFICE  
UNDER THE PATENT COOPERATION TREATY-CHAPTER II

5

**PRELIMINARY AMENDMENT**

APPLICANT: Hans Dieter Hecker DOCKET NO: P00,0069

SERIAL NO: GROUP ART UNIT:

EXAMINER:

10

INTERNATIONAL APPLICATION NO: PCT/DE98/02624

INTERNATIONAL FILING DATE: 07 September 1998

INVENTION: **METHOD AND SYSTEM FOR AUTOMATICALLY  
TRANSLATING MESSAGES IN A COMMUNICATION  
SYSTEM**Assistant Commissioner for Patents,  
Washington, D.C. 20231

15

Sir:

Please amend the above-identified International Application before  
entry into the National stage before the U.S. Patent and Trademark Office  
under 35 U.S.C. §371 as follows:

20

**In The Specification:**

On page 1, cancel lines 1-4 and substitute therefor:

**--SPECIFICATION**

25

**TITLE****METHOD AND SYSTEM FOR AUTOMATICALLY TRANSLATING  
MESSAGES IN A COMMUNICATION SYSTEM****BACKGROUND OF THE INVENTION****Field of the Invention**

30

The present invention relates to a method and system in a  
communication system for translating messages in the most convenient  
manner possible, wherein the messages are directed to a called subscriber

BOX PCT

IN THE UNITED STATES DESIGNATED/ELECTED OFFICE  
OF THE UNITED STATES PATENT AND TRADEMARK OFFICE  
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APPLICANT: Hans Dieter Hecker DOCKET NO: P00,0069

SERIAL NO: GROUP ART UNIT:

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INTERNATIONAL APPLICATION NO: PCT/DE98/02624

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INVENTION: **METHOD AND SYSTEM FOR AUTOMATICALLY  
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Washington, D.C. 20231

Sir:

Please amend the above-identified International Application before  
entry into the National stage before the U.S. Patent and Trademark Office  
under 35 U.S.C. §371 as follows:

**In The Specification:**

On page 1, cancel lines 1-4 and substitute therefor:

**--S P E C I F I C A T I O N**

25

**TITLE**

**METHOD AND SYSTEM FOR AUTOMATICALLY TRANSLATING  
MESSAGES IN A COMMUNICATION SYSTEM**

**BACKGROUND OF THE INVENTION****Field of the Invention**

30

The present invention relates to a method and system in a  
communication system for translating messages in the most convenient  
manner possible, wherein the messages are directed to a called subscriber

and are translated into a language that is dependent upon the called subscriber.

**Description of the Prior Art--**

On page 1, line 9, cancel “; a” and substitute therefor --. A--.

On page 1, line 18, insert --respectively-- before “looped”.

On page 1, line 19, insert --which are-- after “devices”.

On page 1, line 19, cancel the “, respectively”.

On page 1, line 21, cancel “deveices” and substitute therefor -- devices--.

On page 2, line 1, cancel “the” before “object” and substitute therefor --an--.

On page 2, line 1, cancel “an arrangement” and substitute therefor --system--.

On page 2, line 3, insert --such-- before “different”.

On page 2, cancel lines 5-16 and substitute the following therefor:

**--SUMMARY OF THE INVENTION**

Accordingly, with an eye toward the advantage that a subscriber can communicate in his native language without additionally inputting information, the present invention provides a method in a communication system for translating messages that are directed to a called subscriber into a language that is dependent upon the called subscriber, wherein the method includes the steps of: storing selector information designating a language that is allocated to the relevant subscriber for internal subscribers in the communication system; comparing the selector information of the calling subscriber, when a connection is set up, to the selector information of the called subscriber; and automatically activating a loop-in function, when the items of selector information differ, which effects an insertion of a translator into the connection.

In an embodiment, the method further includes the step of storing, in the communication system, display texts for a dialog operator interface of internal terminal devices in several languages.

5 In an embodiment, the method further includes the step of forming the selector information dependent on the language of the display texts for the dialog operator interface that is selected by a subscriber.

10 In an embodiment, the method further includes the step of transmitting, in cases when a calling terminal device and a called terminal device are allocated to different communication systems, the selector information from the communication system of the calling terminal device to that of the called terminal device.

In an embodiment, the method further includes the step of transmitting the selector information in the framework of a call signaling, particularly of an ISDN call signaling.

15 In an embodiment, the method further includes the step of transmitting, in cases when a calling terminal device and a called terminal device are allocated to different communication systems, the selector information from the communication system of the called terminal device to that of the calling terminal device.

20 In an embodiment, the method further includes the step of deactivating the loop-in function.

In an embodiment of the method, the message to be translated is either a voice message, a fax message, a video message or a message for electronic mail.

25 In a further embodiment of the present invention, a system is provided in a communication system for translating messages, that are directed to a called subscriber, into a language that depends on the called subscriber, wherein the system includes: a text memory in which display text for a display operator interface of the internal terminal devices are stored in

several languages; subscriber-specific storage elements in which an item of selector information that identifies a language that has been selected for the subscriber terminal is respectively stored; at least one translator for translating spoken language and/or at least one translator for translating text; and a control unit for controlling a loop-in function that effectuates an insertion of a translator into a connection between the called subscriber and a calling subscriber in cases when the selector information allocated to the called subscriber is different from the selector information allocated to the calling subscriber.

Additional features and advantages of the present invention are described in, and will be apparent, from the following Detailed Description of the Preferred Embodiments and the Drawings.

#### **DESCRIPTION OF THE DRAWINGS--.**

On page 2, line 18, insert --shows-- after "Figure 1".

On page 2, line 18, insert --schematic-- after "structural".

On page 2, line 18, cancel "of the schematic".

On page 2, line 19, insert --; and-- after "method".

On page 2, line 20, insert --shows-- after "Figure 2".

On page 2, line 20, insert --schematic-- after "structural".

On page 2, line 20, cancel "of the schematic".

On page 2, line 21, insert --also in accordance with the method of the present invention.-- after "subscribers".

On page 2, before line 23, insert the following centered heading:

#### **--DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS--.**

On page 2, line 25, cancel the "," after "CC".

On page 3, line 3, cancel "The".

On page 3, line 3, insert --1-- after "Figure".

On page 3, line 3, cancel "exemplarily".

On page 3, line 5, cancel "comprise" and substitute therefor --include--.

On page 3, line 9, cancel the "," after "networks".

On page 3, line 26, cancel "can".

5

On page 3, line 26, insert --can--.

On page 3, line 26, insert --can-- after "also".

On page 4, line 1, cancel "the" before "Figure".

On page 4, line 1, insert --1-- after "Figure".

10

On page 4, include the paragraph which begins on line 14 in the paragraph which ends on line 12.

On page 4, include the paragraph which begins on line 19 in the paragraph which ends on line 17.

On page 4, line 20, cancel "said" and substitute therefor --such--.

On page 4, line 26, cancel "the".

15

On page 4, line 26, insert --1-- after "Figure".

On amended page 6, include the paragraph which begins on line 4 in the paragraph which ends on line 2.

On amended page 6, line 6, insert a --,-- after "e.g.".

On amended page 6, line 7, insert --the-- before "name".

20

On amended page 6, line 7, insert --the-- before "call number".

On amended page 6, cancel line 11.

On page 8, line 15, insert a --,-- after "e.g.".

On page 8, line 17, insert --present-- before "invention".

On page 8, line 22, cancel "can".

25

On page 8, line 22, insert --can-- after "also".

On page 9, line 1, cancel "is".

On page 9, line 1, insert --is-- after "also".

On page 9, line 1, insert --present-- before "invention".

On page 9, line 2, cancel "also".



On page 9, after line 3, insert the following paragraph:

--Although the present invention has been described with reference to specific embodiments, those of skill in the art will recognize that changes may be made thereto without departing from the spirit and scope of the invention as set forth in the hereafter appended claims.--

On page 13, (last page) cancel lines 1-4 and substitute the following centered heading therefor:

**--ABSTRACT OF THE DISCLOSURE--**.

On page 13, line 6, cancel "When" and substitute the following therefor: --A method and system for automatically translating messages in a communication system wherein, when--.

On page 13, line 6, cancel "(E.G.-A)".

On page 13, line 7, cancel "(EG-B)".

On page 13, line 7, cancel "(SI-A)".

On page 13, line 9, cancel "(SI-B)".

On page 13, line 10, cancel "(SI-A, SI-B)".

On page 13, line 10, cancel "(TRSS, TRTT)".

On page 13, cancel line 13.

**In the Claims:**

On page 10, cancel line 1 and substitute the following left-hand justified heading therefor:

**--I Claim As My Invention--**.

Please cancel claims 1-8, without prejudice, and substitute the following claims therefor:

9. A method in a communication system for translating messages that are directed to a called subscriber into a language that is dependent upon the called subscriber, the method comprising the steps of:

storing selector information designating a language that is allocated to a relevant subscriber for internal subscribers in the communication system;

5 comparing the selector information of a calling subscriber, when a connection is set up, to the selector information of the called subscriber; and

automatically activating a loop-in function, when items of the selector information of the calling subscriber differs from the selector information of the called subscriber, which effects an insertion of a translator into the connection.

10 10. A method in a communication system for translating messages that are directed to a called subscriber into a language that is dependent upon the called subscriber as claimed in claim 9, the method further comprising the step of:

15 storing display texts, in the communication system, for a dialog operator interface of internal terminal devices in several languages.

20 11. A method in a communication system for translating messages that are directed to a called subscriber into a language that is dependent upon the called subscriber as claimed in claim 10, the method further comprising the step of:

forming the selector information dependent on the language of the display text for the dialog operator interface that is selected by a subscriber.

25 12. A method in a communication system for translating messages that are directed to a called subscriber into a language that is dependent upon the called subscriber as claimed in claim 9, the method further comprising the step of:

transmitting, when a calling terminal device and a called terminal device are allocated to different communication systems, the selector information from the communication system of the calling terminal device to the communication system of the called terminal device.

5

13. A method in a communication system for translating messages that are directed to a called subscriber as claimed in claim 12, the method further comprising the step of:

transmitting the selector information in the framework of an ISDN call signaling.

10

14. A method in a communication system for translating messages that are directed to a called subscriber as claimed in claim 9, the method further comprising the step of:

transmitting, in cases when a calling terminal device and a called terminal device are allocated to different communication systems, the selector information from the communication system of the called terminal device to the communication system of the calling terminal device.

15

15. A method in a communication system for translating messages that are directed to a called subscriber as claimed in claim 14, the method further comprising the step of:

transmitting the selector information in the framework of an ISDN call signaling.

20

16. A method in a communication system for translating messages that are directed to a called subscriber as claimed in claim 9, the method further comprising the step of:

deactivating the loop-in function.

25

17. A method in a communication system for translating messages that are directed to a called subscriber as claimed in claim 9, wherein the message to be translated is at least one of a voice message, a fax message, a video message and a message for electronic mail.

18. A system in a communication system for translating messages, that are directed to a called subscriber, into a language that depends on the called subscriber, the system comprising:

a text memory in which display text for a display operator interface of internal terminal devices are stored in several languages;

subscriber-specific storage elements in which an item of selector information that identifies a language that has been selected for the subscriber terminal is respectively stored;

at least one translator for translating at least one of spoken language and text; and

a control unit for controlling a loop-in function that effectuates an insertion of a translator into a connection between the called subscriber and a calling subscriber in cases when the selector information allocated to the called subscriber is different from the selector information allocated to the calling subscriber.

#### **REMARKS**

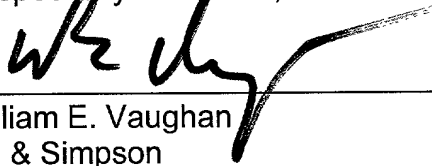
The present amendment makes editorial changes and corrects typographical errors in the specification in order to conform the specification to the requirements of the United States Patent practice. No new matter is added thereby. Original claims 1-8 have been canceled in favor of new claims 9-18. However, claims 9-18 have been presented solely because the revisions by bracketing and underlining which would have been necessary in claims 9-18 in order to conform those claims to the requirements of United States Patent practice would have been too extensive, and thus would have

been too burdensome. The cancellation of claims 1-8 does not constitute an intent on the part of the Applicant to surrender any of the subject matter of claims 1-8.

Early consideration on the merits is respectfully requested.

5

Respectfully submitted,



(Reg.No. 39,056)

10

William E. Vaughan  
Hill & Simpson  
A Professional Corporation  
85th Floor Sears Tower  
Chicago, Illinois 60606  
(312) 876-0200  
Attorneys for Applicant

2/ppts.

METHOD AND ARRANGEMENT FOR AUTOMATICALLY TRANSLATING  
MESSAGES IN A COMMUNICATION SYSTEM

- 5 The Siemens product guide "ISDN in the Office" (special edition telecom report and Siemens Magazine *COM*; ISBN 3-8009-3849-9, pp 58-66) teaches a private communication system that makes additional functions available, besides switching-related functions. Such additional functions are generally referred to as performance features; a large number of different performance features are known for the
- 10 communication service "voice".

- With the increasing internationalization of telephone traffic, the number of connections between telephone subscribers who speak different languages is growing. In the course of this development, it is known that efforts have been made to facilitate
- 15 understanding between telephone subscribers who speak different languages by inserting a translating device.

- EP 0 585 480 A1 teaches a method in which translation devices are looped in between two subscriber terminal devices participating in a conference connection, respectively.
- 20 To loop in a translation device, it is necessary to input additional information into one or more subscriber terminal devices participating in the conference connection.

- The information that triggers the loop-in of the translation device is inputted upon request either by selecting a call number at the respective subscriber terminal device
- 25 or by voice sampling in the language in which the respective conference subscriber wants to conduct the subsequent conversation in the context of the conference connection; that is, wants to speak and hear.

It is the object of the present invention to set forth a method and an arrangement which affords a higher level of convenience in a connection between subscribers of different native languages.

- 5 This object is inventively achieved in accordance with the features of patent claim 1 or 8, respectively.

An essential advantage of the inventive method is that a subscriber can communication in his native language without additionally inputting information.

10

Advantageous developments of the invention are set forth in the subclaims.

An exemplifying embodiment of the invention is detailed below with the aid of the drawing.

15

Shown are:

Figure 1 a structural diagram of the schematic of a communication system for carrying out the inventive method

- 20 Figure 2 a structural diagram of the schematic of the functional units participating in the context of a connection set-up between subscribers

- Figure 1 depicts essential functional elements of a communication system with the aid of a structural diagram. The depicted communication system consists of a system center PBX with a control unit CC, which is connected to terminal units LTU1, LTU2, ..., LTUn and to a switching matrix array SN.
- 25

The terminal units LTU1, LTU2, ..., LTUn contain subscriber-oriented device terminals, such as ISDN base terminals for digital monofunctional and multifunctional

terminal devices, 1-channel terminal modules for terminal devices such as digital voice terminal devices and network terminal devices, and subscriber terminals for analog voice terminal devices and fax terminal devices. The Figure exemplarily depicts an internal fax terminal device FAX1 as well as a digital voice terminal device

5 T1 and a multifunctional terminal device M1, which respectively comprise a dialog operator interface DBO.

The terminal units LTU1, LTU2,..., LTUn contain line set circuits that serve for connecting to public and/or private networks, or respectively, to special equipment.

10 These include ISDN base terminals for ISDN office traffic (office lines AL1, AL2,..., ALn) and ISDN cross traffic (2 channels at 64 kBit/s and ISDN signaling) as well as digital interface units; that is, multiplex terminals (30 channels at 64 kBit/s each) with the operating modes of office traffic and cross traffic with ISDN signaling, and cross traffic with channel-associated signaling.

15 The terminal units LTU1, LTU2, ..., LTUn are connected to the switching matrix array SN via four voice data multiplexing channels, for example. The message exchange between the terminal units LTU1, LTU2, ..., LTUn and the controller CC is accomplished via a signaling channel (referenced HDLC in the Figure) in the known

20 HDLC point-to-multipoint method.

The switching matrix array SN is preferably modularly constructed and consists of a timer for 16-voice-data multiplex channels [sic] with no blocking. The connecting of two such base modules produces a coupling stage for 1024 time layers (32 multiplex

25 channels for every 32 channels). Besides 1-channel connections, broadband connections can also be produced.

The control unit CC consists of a data processor DP, a processor for signal control DCL, a clock generator PCG and a database DB. These components are connected to



one another via a system bus SB, as is illustrated in the Figure. The database DB contains a text memory ROM and a selector memory RAM, whereby display texts for a dialog operator interface DBO of internal terminal devices are stored in the text memory ROM in several languages. By pressing a language selection button (not  
 5 illustrated) at the terminal device (FAX1, T1, M1), the dialog operator interface DBO can be switched to another available language. The language that was set at the terminal device (FAX1, T1, M1) is stored as selector information in the selector memory RAM, either temporarily until the end of the next conversation, or statically until the next language selection by the user.

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A voice information server VMS and a text and fax server TFS are connected to the previously described components via a system bus SB.

15

The voice information server VMS offers the connected subscribers the ability to reroute their telephone connection to personal "voice mailboxes". The incoming voice information is then stored in the mailboxes in digitized form and reproduced in natural language in the output.

20

By means of the text and fax server TFS, incoming text or fax messages are filed in a person-related text or fax mailbox, said messages being outputted upon polling by the user.

25

Via the switching matrix array SN, voice translation devices TRSS1,...,TRSSn and text translation devices TRTT1,...,TRTTn are connected to the communication system. The translators TRTT,TRSS are connected to the system bus SB for control purposes, as illustrated in the Figure.

The voice translators TRSS1,...,TRSSn serve for translating a spoken message from a source language into a desired target language, and vice versa. For example, by

means of the voice translator TRSS1, it is possible to translate a German message into an English message, and vice versa. The devices used as voice translators TRSS1,...,TRSSn are like those used in the European patent application 585 480, for example.

5

The text translators TRTT1...TRTTn serve for translating a text that is written in a source language into a desired target language. By means of the text translator TRTT1, a German text can be translated into an English text. The devices used as text translators TRTT1,...TRTTn are like those used in the European patent application 357 370.

10

Figure 2 schematically depicts a communication system KFK-A with a calling terminal device EG-A allocated thereto, on one hand, and a communication system KS-B with a called terminal device EG-B allocated thereto, on the other hand. For the sake of simplifying the description, it is assumed that both communication systems KS-A, KS-B are constructed as is described in connection with Figure 1.

15

In a data base DB-A of the communication system KS-A, selector information SI is filed in a selector memory RAM, which information identifies the language that is set for a display operator interface DBO of internal terminal devices EG. Thus, for example, selector information SI-A is filed in the selector memory RAM for the illustrated calling terminal device EG-A.

20

In the same way, selector information SI is filed in a database DB-B of the communication system KS-B in a selector memory RAM, which information identifies the language that is set for a display operator interface DBO of internal terminal devices EG. Thus, for the illustrated called terminal device EG-B, selector information SI-B is filed in the selector memory RAM. In the depicted configuration, the language for the display operator interface DBO of the calling terminal device EG-

25

A is German D; for the display operator interface DBO of the called terminal device EG-B, the language is English E.

In a connection set-up from the calling terminal device EG-A to the called terminal device EG-B, in addition to the customary subscriber data (e.g. name of the subscriber making the call and call number of the subscriber's station), the selector information SI-A that is allocated to the calling terminal device is transmitted to the communication system KS-B in the context of a call signaling message SETUP.

10 The following refers in part to Figure 1.

With the aid of the transmitted selector information SI-A, the communication system KS\_B identifies the language that is set for the calling terminal device EG-A, henceforth referred to as source language. By means of the selector information SI-B, 15 the communication system KS-B identifies the native language that is set for the called terminal device EG-B, henceforth referred to as target language. If the selector information SI-A differs from the selector information SI-B, then the connection is automatically led via a translator TRSS, TRTT, which translates a message from the source language into the target language.

20

If the terminal devices EG-A, EG-B are a matter of digital voice terminal devices between which there is a connection for transmitting spoken messages, then a message coming in at the communication system KS-B is forwarded via the switching matrix array SN and the line c to the voice translator TRSS1, which translates the incoming 25 message from the source language (e.g. German) into the target language (e.g. English) and transfers the translated message to the called terminal device EG-B via the line d and the switching matrix array SN. Messages that are to be subsequently transmitted from the called terminal device EG-B to the calling terminal device EG-A are forwarded via the switching matrix array SN and the line d to the voice translator

TRSS1, which translates the message from English into German and transfers the translated message to the calling terminal device EG-A via the line c and the switching matrix array SN.

- 5 If the called terminal device EG-B is unavailable at the time of the connection set-up, a spoken message is stored together with the transmitted selector information SI-A in a personal voice mailbox, from which the message is outputted upon request by the receiver. The message is forwarded via the switching matrix array SN and the line c to the voice translator TRSS1, which translates the message form the source language
- 10 German into the target language English and transmits the translated message to the called terminal device EG-B via the line d and the switching matrix array SN.

- If the terminal devices EG-A, EG-B are fax terminal devices, for example, between which there is a data connection for transmitting fax messages, then the text portions
- 15 of a fax message arriving at the communication system KS-B are converted into a text format in the source language with the aid of a character detector (optical character reading) that is known per se, which is not illustrated. The message is then forwarded via the switching matrix array and the line a to the text translator TRTT1, which translates the text from the source language German into the target language English
- 20 and transfers the translated massge via the line b and the switching matrix array SN to the called terminal device EG-B.

- If the called terminal device EG-B is unavailable at the time of the connection set-up, the fax message is stored in a personal fax mailbox together with the transmitted
- 25 selector information SI-A. Upon polling by the receiver, the stored message is translated and transmitted to the called terminal device EG-B as described.

When the terminal devices EG-A, EG-B are multifunctional devices, for example, between which there is a data connection for transmitting electronic mail, the message

that is to be translated is forwarded via the switching matrix array SN and the line a to the text translator TRTT1, which translates the message from the source language German into the target language English and transfers the translated message to the called terminal device EG-B via the line b and the switching matrix array SN. If the  
 5 called terminal device EG-B is unavailable at the time of the connection set-up, an arriving message is stored in a personal text mailbox together with the transmitted selector information SI-A. Upon polling by the receiver, the stored message is translated by the text translator TRTT1 and transferred to the called terminal device EG-B as described.

10

The user has the option of deactivating the automatic translation. In a voice terminal device, a corresponding menu for the display operator interface DBO is offered for this purpose, in which menu the user can accept or decline the offered translation before activating the translation. For a device with a screen, this option is integrated  
 15 into the monitor interface that is used in the various services (e.g. fax service).

It is provided in the context of the invention that the translation of a message is not performed exclusively by the communication system KS-B to which the called terminal device EG-B is allocated. If the communication system KS-B does not have  
 20 at its disposal a suitable translator TRSS, TRTT which realizes a translation of a message from the source language into a desired target language, or if the translator TRSS, TRTT is not available, then the translation can also be performed by the communication system KS-A to which the calling terminal device EG-A is allocated.

25 Furthermore, it is possible that only calls coming in at the communication system KS-B are translated from the source language into the target language. Messages that are transferred from the called terminal device EG-B to the calling terminal device EG-A are then translated from the target language into the source language by the communication system KS-A.

5

## Patent Claims

1. Method in a communication system for translating messages that are directed to a  
 5 called subscriber into a language that depends on said subscriber,  
 whereby selector information (SI) designating a language that is allocated to the  
 relevant subscriber is stored for internal subscribers in the communication system  
 (KS),  
 and, when a connection is set up, the selector information (SI-A) of the calling  
 10 subscriber is compared to the selector information (SI-B) of the called subscriber,  
 and that, when the items of selector information (SI-A, SI-B) differ, a loop-in function  
 is automatically activated, which effects an insertion of a translator (TRSS, TRTT)  
 into the connection.
- 15 2. Method as claimed in claim 1,  
characterized in that  
 in the communication system (KS), display texts for a dialog operator interface of  
 internal terminal devices (EG) are stored in several languages.
- 20 3. Method as claimed in claim 2,  
characterized in that  
 the selector information is formed dependent on the language of the display texts for  
 the dialog operator interface that is selected by a subscriber.
- 25 4. Method as claimed in one of the preceding claims,  
characterized in that  
 in cases when a calling terminal device (EG-A) and a called terminal device (EG-B)  
 are allocated to different communication systems (KS-A, KS-B), the selector  
 information (SI-A) is transmitted from the communication system (KS-A) of the

calling terminal device (EG-A) to that of the called terminal device (EG0B), and/or the selector information (SI-B) is transmitted from the communication system (KS-B) of the called terminal device (EG-B) to that of the calling terminal device (EG-A).

5 5. Method as claimed in claim 4,

characterized in that

the selector information (SI-A, SI-B) is transmitted in the framework of a call signaling (SETUP), particularly of an ISDN call signaling.

10 6. Method as claimed in one of the preceding claims,

characterized in that

the loop-in function can be deactivated.

7. Method as claimed in one of the preceding claims,

15 characterized in that

the message to be translated is a voice message (voice) , a fax message (fax) , a video message or a message for electronic mail (e-mail).

8. Arrangement in a communication system for translating messages that are directed  
20 to a called subscriber into a language that depends on this subscriber,  
with a text memory (PS) in the communication system (KS) in which display texts for a display operator interface of internal terminal devices (EG) are stored in several languages;  
and with subscriber-terminal-specific storage elements (DS) in the communication  
25 system (PBX), in which an item of selector information (SI) identifying a language that has been selected for a subscriber terminal is respectively stored;  
and with at least one translator (TRSS) for translating spoken language and/or at least one translator (TRTT) for translating text;



and with a control unit (CC) in the communication system (PBX), for carrying out one of the methods as claimed in claims 1 to 7.

## Abstract

Method and arrangement for automatically translating messages in a communication system

5

When a connection is set up between a calling terminal device (EG-A) and a called terminal device (EG-B), a first item of selector information (SI-A) identifying a language that depends on a calling subscriber is compared to a second item of selector information (SI-B) identifying a language that depends on a called subscriber. If the items of selector information (SI-A, SI-B) do not match, a translator (TRSS, TRTT) is looped into the connection automatically.

10

Figure 2

15

BOX PCT

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OF THE UNITED STATES PATENT AND TRADEMARK OFFICE  
UNDER THE PATENT COOPERATION TREATY-CHAPTER II

5     APPLICANT:     Hans Dieter Hecker     DOCKET NO: P00,0069  
       SERIAL NO:                                 GROUP ART UNIT:  
   EXAMINER:

INTERNATIONAL APPLICATION NO: PCT/DE98/02624

INTERNATIONAL FILING DATE:     07 September 1998


10    INVENTION:     **METHOD AND SYSTEM FOR AUTOMATICALLY  
                         TRANSLATING MESSAGES IN A COMMUNICATION  
                         SYSTEM**

Assistant Commissioner for Patents,  
Washington, D.C. 20231

15                                 **SUBMISSION OF DRAWINGS**

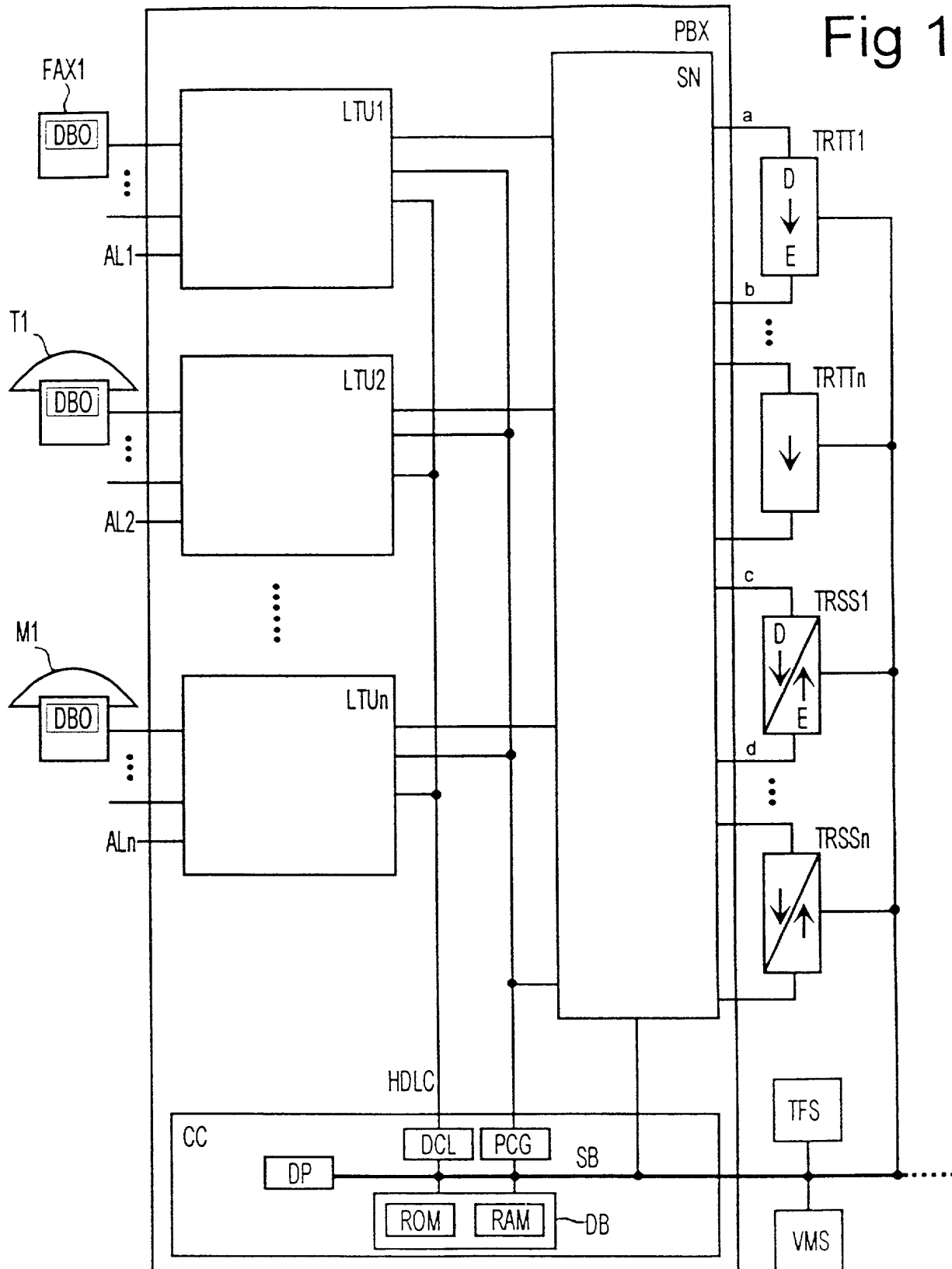
Applicant herewith submits two sheets (FIGS. 1-2) of drawings for  
the above-referenced PCT application.

Respectfully submitted,

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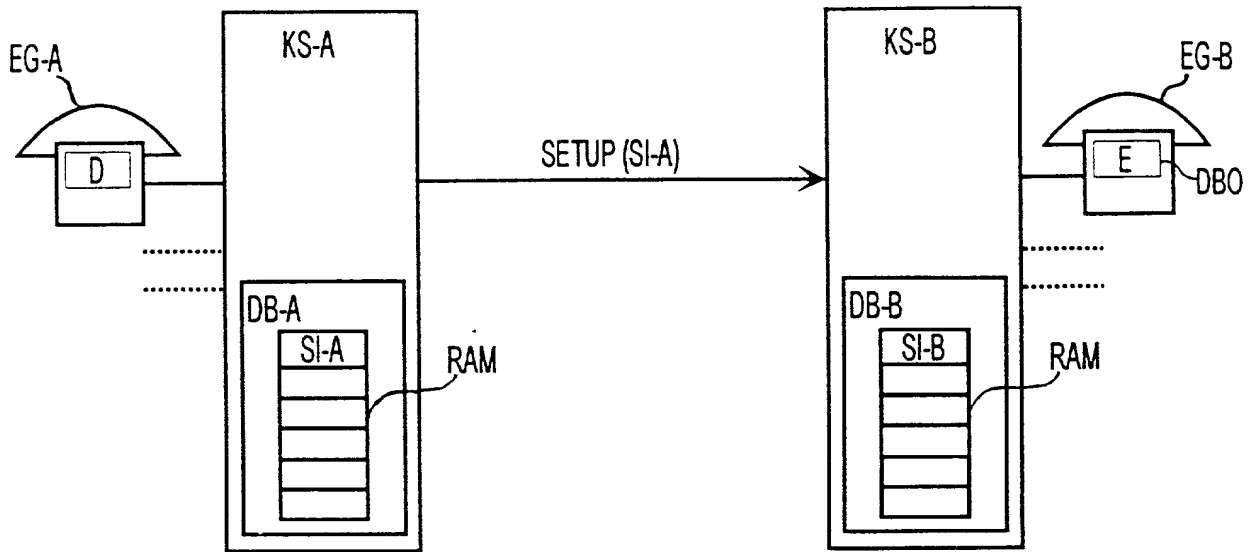
1 / 2

Fig 1



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Fig 2



# Declaration and Power of Attorney For Patent Application

## *Erklärung Für Patentanmeldungen Mit Vollmacht*

### German Language Declaration

Als nachstehend benannter Erfinder erkläre ich hiermit an Eides Statt:

dass mein Wohnsitz, meine Postanschrift, und meine Staatsangehörigkeit den im Nachstehenden nach meinem Namen aufgeführten Angaben entsprechen,

dass ich, nach bestem Wissen der ursprüngliche, erste und alleinige Erfinder (falls nachstehend nur ein Name angegeben ist) oder ein ursprünglicher, erster und Miterfinder (falls nachstehend mehrere Namen aufgeführt sind) des Gegenstandes bin, für den dieser Antrag gestellt wird und für den ein Patent beantragt wird für die Erfindung mit dem Titel:

Verfahren und Anordnung für eine  
automatische Übersetzung von  
Nachrichten in einem Kommunikations-  
system

deren Beschreibung

(zutreffendes ankreuzen)

☒ hier beigefügt ist.

☐ am \_\_\_\_\_ als

PCT internationale Anmeldung

PCT Anmeldungsnummer \_\_\_\_\_

eingereicht wurde und am \_\_\_\_\_

abgeändert wurde (falls tatsächlich abgeändert).

Ich bestätige hiermit, dass ich den Inhalt der obigen Patentanmeldung einschliesslich der Ansprüche durchgesehen und verstanden habe, die eventuell durch einen Zusatzantrag wie oben erwähnt abgeändert wurde.

Ich erkenne meine Pflicht zur Offenbarung irgendwelcher Informationen, die für die Prüfung der vorliegenden Anmeldung in Einklang mit Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) von Wichtigkeit sind, an.

Ich beanspruche hiermit ausländische Prioritätsvorteile gemäss Abschnitt 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 119 aller unten angegebenen Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde, und habe auch alle Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde nachstehend gekennzeichnet, die ein Anmeldedatum haben, das vor dem Anmeldedatum der Anmeldung liegt, für die Priorität beansprucht wird.

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

the specification of which

(check one)

☐ is attached hereto.

☐ was filed on \_\_\_\_\_ as

PCT international application

PCT Application No. \_\_\_\_\_

and was amended on \_\_\_\_\_

(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

## German Language Declaration

Prior foreign applications

Priorität beansprucht

Priority Claimed

197 41 475.3    Germany    19. September 1997  
(Number)    (Country)    (Day Month Year Filed)  
(Nummer)    (Land)    (Tag Monat Jahr eingereicht)

☒    ☐  
Yes    No  
Ja    Nein

\_\_\_\_\_  
(Number)    (Country)    (Day Month Year Filed)  
(Nummer)    (Land)    (Tag Monat Jahr eingereicht)

☐    ☐  
Yes    No  
Ja    Nein

\_\_\_\_\_  
(Number)    (Country)    (Day Month Year Filed)  
(Nummer)    (Land)    (Tag Monat Jahr eingereicht)

☐    ☐  
Yes    No  
Ja    Nein

Ich beanspruche hiermit gemäss Absatz 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 120, den Vorzug aller unten aufgeführten Anmeldungen und falls der Gegenstand aus jedem Anspruch dieser Anmeldung nicht in einer früheren amerikanischen Patentanmeldung laut dem ersten Paragraphen des Absatzes 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 122 offenbart ist, erkenne ich gemäss Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) meine Pflicht zur Offenbarung von Informationen an, die zwischen dem Anmeldedatum der früheren Anmeldung und dem nationalen oder PCT internationalen Anmeldedatum dieser Anmeldung bekannt geworden sind.

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §122, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

\_\_\_\_\_  
(Application Serial No.)  
(Anmeldeseriennummer)

\_\_\_\_\_  
(Filing Date)  
(Anmeldedatum)

\_\_\_\_\_  
(Status)  
(patentiert, anhängig,  
aufgegeben)

\_\_\_\_\_  
(Status)  
(patented, pending,  
abandoned)

\_\_\_\_\_  
(Application Serial No.)  
(Anmeldeseriennummer)

\_\_\_\_\_  
(Filing Date)  
(Anmeldedatum)

\_\_\_\_\_  
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## German Language Declaration

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POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (list name and registration number)

And I hereby appoint

Messrs. John D. Simpson (Registration No. 19,842), Lewis T. Steadman (17,074), William C. Stueber (16,453), P. Phillips Connor (19,259), Dennis A. Gross (24,410), Marvin Moody (16,549), Steven H. Noll (28,982), Brett A. Valiquet (27,841), Thomas I. Ross (29,275), Kevin W. Gynn (29,927), Edward A. Lehmann (22,312), James D. Hobart (24,149), Robert M. Barrett (30,142), James Van Sanfen (16,584), J. Arthur Gross (13,615), Richard J. Schwarz (13,472) and Melvin A. Robinson (31,870), David R. Metzger (32,919), John R. Garrett (27,888) all members of the firm of Hill, Steadman & Simpson, A Professional Corporation.

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**85th Floor Sears Tower, Chicago, Illinois 60606**

Voller Name des einzigen oder ursprünglichen Erfinders: <b>HECKER, Hans-Dieter</b>		Full name of sole or first inventor:	
Unterschrift des Erfinders <i>Hans-Dieter Hecker</i>	Datum <b>2.9.98</b>	Inventor's signature	Date
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Voller Name des zweiten Miterfinders (falls zutreffend):		Full name of second joint inventor, if any:	
Unterschrift des Erfinders	Datum	Second Inventor's signature	Date
Wohnsitz		Residence	
Staatsangehörigkeit		Citizenship	
Postanschrift		Post Office Address	

(Bitte entsprechende Informationen und Unterschriften im Falle von dritten und weiteren Miterfindern angeben).

(Supply similar information and signature for third and subsequent joint inventors).